

BEFORE THE SOUTH CAROLINA PUBLIC SERVICE COMMISSION

DOCKET NO. 2018-318E

**DIRECT TESTIMONY
AND APPENDIX
OF
KEVIN W. O'DONNELL, CFA**

**ON BEHALF OF THE
SOUTH CAROLINA ENERGY USERS COMMITTEE**

March 4, 2019

TABLE OF CONTENTS

I. INTRODUCTION3

II. PURPOSE OF TESTIMONY5

III. SUMMARY/RECOMMENDATIONS.....6

IV. DISCUSSION6

1. Energy Costs for Manufacturers Located in DEP Service Territory.....7

2. Duke’s Planned Grid “Updates”..... 13

3. Coal Ash Costs..... 34

4. Hourly Pricing Rates..... 45

V. RECOMMENDATIONS AND CONCLUSION46

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS**
3 **FOR THE RECORD.**

4 A. My name is Kevin W. O'Donnell. I am President of Nova Energy Consultants,
5 Inc. My business address is 1350 Maynard Rd., Suite 101, Cary, North Carolina
6 27511.

7 **Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS**
8 **PROCEEDING?**

9 A. I am testifying on behalf of the South Carolina Energy Users Committee
10 (SCEUC). A number of SCEUC members take retail electric service from the
11 applicant, Duke Energy Progress (DEP, Duke, or Company), and the outcome of
12 this proceeding will have a direct bearing on these SCEUC members.
13

14 **Q. WERE YOUR TESTIMONY AND APPENDIX PREPARED BY YOU OR**
15 **UNDER YOUR DIRECT SUPERVISION AND CONTROL?**

16 A. Yes, they were.
17

18 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
19 **RELEVANT EMPLOYMENT EXPERIENCE.**

20 A. I have a Bachelor of Science in Civil Engineering from North Carolina State
21 University and a Master of Business Administration from the Florida State
22 University. I earned the designation of Chartered Financial Analyst ("CFA") in
23 1988.

24 I have worked in utility regulation since September 1984, when I joined the Public
25 Staff of the North Carolina Utilities Commission ("NCUC"). I left the NCUC
26 Public Staff in 1991 and have worked continuously since then in utility
27 consulting: first with Booth & Associates, Inc. as a financial analyst and then as

1 Director of Retail Rates for the North Carolina Electric Membership Corporation
2 from 1994 to 1995, and since then as principal for my own consulting firm.

3 I have been admitted as an expert witness on rate of return, cost of capital, capital
4 structure, cost of service, rate design, and other regulatory issues in general rate
5 cases, fuel cost proceedings, and other proceedings before the following
6 regulatory bodies: the North Carolina Utilities Commission; the South Carolina
7 Public Service Commission; the Wisconsin Public Service Commission; the
8 Maryland Public Service Commission; the Virginia State Commerce
9 Commission; the Minnesota Public Service Commission; the New Jersey Board
10 of Public Utilities; the Colorado Public Utilities Commission; the District of
11 Columbia Public Service Commission; and the Florida Public Service
12 Commission.

13
14 In 1996, I testified before the U.S. House of Representatives' Committee on
15 Commerce and Subcommittee on Energy and Power, concerning competition
16 within the electric utility industry. Additional details regarding my education and
17 work experience are set forth in Appendix A of this testimony.

18

1 **II. PURPOSE OF TESTIMONY**

2 **Q. PLEASE DESCRIBE THE SCOPE OF YOUR TESTIMONY IN THIS**
3 **PROCEEDING?**

4 A. The purpose of my testimony in this proceeding is to present my findings and
5 recommendations to the Commission as to the following issues:

- 6 • the trend in DEP industrial rates in South Carolina and the associated impact on
7 the state's economy;
- 8 • DEP's proposed pre-payment grid investment plan;
- 9 • the appropriate amount of coal ash expense to be included in DEP's rates;
- 10 • DEP's hourly pricing should be set at the lower of the Company's marginal
11 cost or the price as set by the open wholesale power market;
- 12 • Duke's continued operational issues involving reported fines from federal
13 regulators and the Company's poor reputation amongst business customers

1 **III. SUMMARY/RECOMMENDATIONS**

2 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS IN THIS CASE.**

3 A. My findings are as follows:

- 4 • Given the stated rate increases for DEP on the horizon, Duke will be above
- 5 the national average thereby costing South Carolina its competitive edge
- 6 in areas served by the Company;
- 7 • DEP's proposed grid expenditures are too expensive, lack customer
- 8 support, are not sufficiently differentiated from current costs embedded in
- 9 Duke's rates, will be an unnecessary burden on ratepayers, and should be
- 10 disallowed;
- 11 • The Commission should follow the examples set by other regulatory
- 12 jurisdictions and establish a separate proceeding to obtain public input into
- 13 the grid modernization costs the public is willing to pay and the associated
- 14 benefits that will result from those rate increases;
- 15 • the Commission should disallow certain coal ash costs; and
- 16 • DEP's hourly pricing rates should be capped at the lower of DEP's costs
- 17 or the market cost.

18

19 **IV. DISCUSSION**

20 **Q. WHAT IS THE TOTAL RATE HIKE REQUESTED BY DUKE ENERGY**

21 **PROGRESS IN THIS RATE CASE?**

22 A. According to Wheeler Exhibit 4, the Company is seeking a net increase of \$58.6

23 million that accounts to an overall increase of 10.28%. The individual rate

24 changes can be seen in the table below.

25

1

2

3

4

5

8

9

1 In many circumstances, the SC hourly electric prices are higher than the Georgia
2 prices and the SC plant does not operate a certain line on those days. In such a
3 case, the SC utility loses a potential sale, but the loss is not reported in the press
4 such as the reporting of a permanent plant closing. However, over time, the daily
5 losses of load add up and jobs are eventually lost.
6

7 **Q. ARE YOU SAYING THAT ELECTRIC COSTS ARE THE ONLY**
8 **REASON MANUFACTURERS CHOOSE TO LOCATE/OPERATE IN A**
9 **PARTICULAR STATE?**

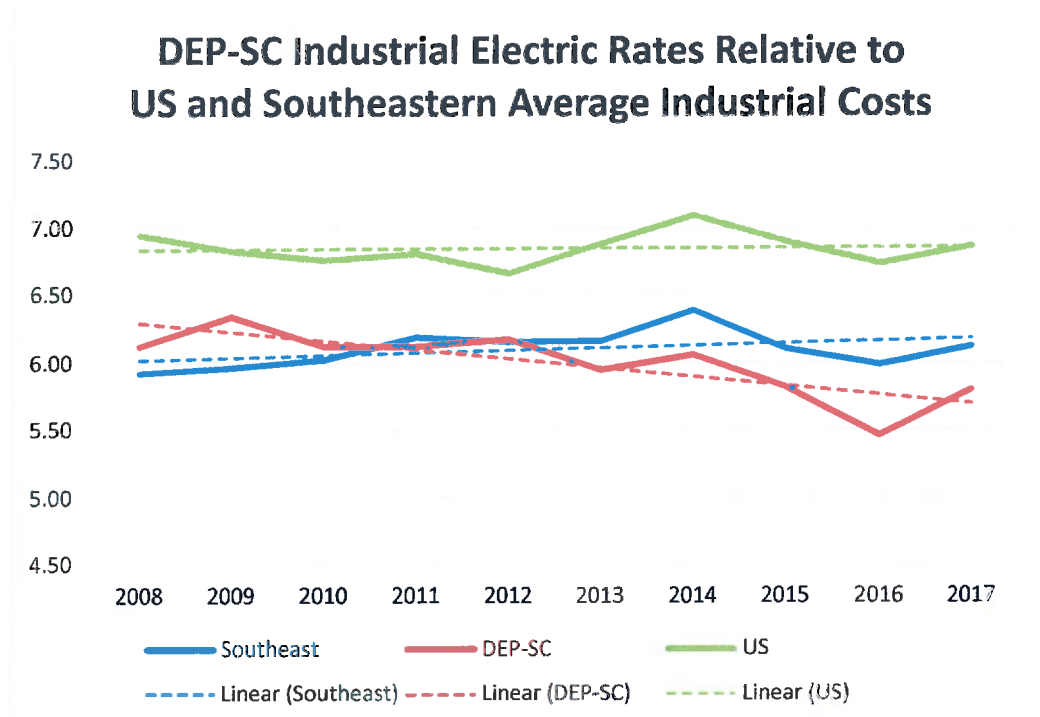
10 A. No. Manufacturers locate and operate in certain areas for a myriad of different
11 reasons. The cost of electricity is one concern for manufacturers, but that concern
12 is magnified the greater the state being examined is out-of-line relative to
13 competing states. Energy intensive industries such as steel, air products, auto
14 manufacturers, and paper companies are particularly sensitive to cost imbalances
15 in the electric industry.
16

17 **Q. HOW HAVE THE DEP SOUTH CAROLINA AVERAGE INDUSTRIAL**
18 **COSTS COMPARED TO INDUSTRIAL COSTS IN OTHER**
19 **SOUTHEASTERN STATES?**

20 A. Chart 1 below shows DEP South Carolina average industrial costs relative to
21 average industrial costs in North Carolina, South Carolina, Alabama, and Georgia.
22 While DEP's average industrial costs are below other southeastern states, the
23 trend is ominous. DEP South Carolina's rates are increasing relative to costs in
24 other southeastern states.
25
26
27
28
29
30
31

1

Chart 1: DEP-SC Rate Comparison



2

3

Source for raw data: US Energy Information Administration

4

5

6

7

8

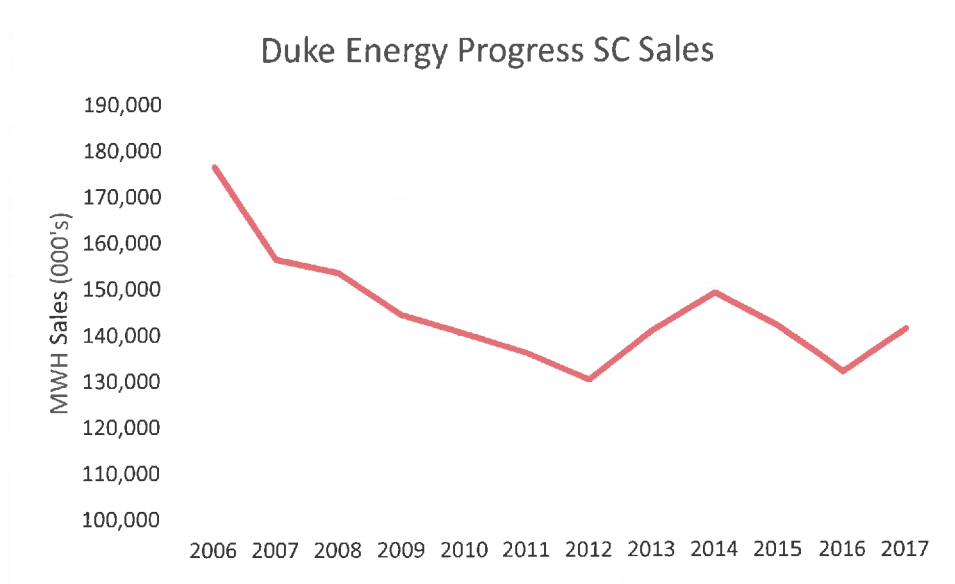
9

10

The trend of the DEP-SC line gives reason for optimism for the Company and its consumers, but there is more than meets the eye to the above graph. DEP lost a significant amount of load leading up to the Great Recession in 2008 and it has struggled to stop the bleeding of the lost industrial load. Chart 2 below shows the industrial sales of DEP-SC from 2006 through 2017.

1

Chart 2: DEP-SC Industrial Sales 2006-2017



2

3

Source of raw data: snl.com

4

5 **Q.**

WHY SHOULD THIS COMMISSION BE CONCERNED ABOUT DEP SOUTH CAROLINA ELECTRIC COSTS RELATIVE TO THE NATIONAL AVERAGE?

6

7

8 **A.**

Historically, states in the southeastern United States have held a competitive advantage over other states across the country. The above chart shows that DEP South Carolina has managed to get its costs under control relative to other southeastern states. Given Duke management's very outspoken decision to drive earnings through massive grid investments, the South Carolina Public Service Commission is the best hope that Duke's consumers have to improve South Carolina's competitive edge.

9

10

11

12

13

14

15

16 **Q.**

PLEASE DESCRIBE THE SOUTH CAROLINA UTILITY SYSTEM AND HOW DUKE'S PLANS FOR CONTINUED RATE THREATENS SOUTH CAROLINA MANUFACTURING.

17

18

19 **A.**

South Carolina operates a monopoly utility system in which customers have no choice but to buy power supplies from the utility that owns the franchise rights to serve them. As a result, the real customers of the electric utilities that operate in

20

21

1 South Carolina are the state regulators and not the bill paying customers.
2 Consequently, the dynamic that exists in regulation is totally divorced from the
3 market forces and competition.
4

5 **Q. IS ANY PART OF THE SOUTH CAROLINA ELECTRIC MARKET**
6 **CURRENTLY DEREGULATED?**

7 A. Yes. Wholesale (sales for resale) electric sales were deregulated through the
8 Energy Policy Act (EPACT) of 1978. Since that time, wholesale competition has
9 existed in some form in South Carolina. The competition has not been vibrant, but
10 recent activities has shown that it is picking up in the state. As an example, NTE
11 Energy recently opened a plant in Kings Mountain, South Carolina that serves
12 many municipal electric systems in both South Carolina and North Carolina. NTE
13 also is currently building another generating plant in Reidsville, NC and has plans
14 to build a very large 1,000 MW plant in Anderson County, SC.
15

16 Southern Power, a division of the Southern Company, also owns several
17 unregulated generating facilities located throughout the southeast. Southern
18 serves a very large electric cooperative located in Duke's service territory in North
19 Carolina.
20

21 **Q. DO CUSTOMERS IN DEREGULATED WHOLESALE POWER**
22 **MARKETS ALWAYS PLACE PRICE AT THE TOP OF THE LIST WHEN**
23 **DECIDING UPON A NEW POWER SUPPLY ARRANGEMENT?**

24 A. No. I have completed approximately 30 wholesale power transactions on behalf
25 of clients in South Carolina and North Carolina. While price is, without a doubt,
26 incredibly important, price certainty, credit quality, being comfortable with
27 company representatives, and assistance with economic development all play
28 important roles in choosing a power supplier in an open market.
29

30 One inherent disadvantage incumbent utilities have in competing in the open
31 wholesale markets is the regulatory business model incentivizes utilities to build

1 plant, such as generation, distribution, and transmission plant, as a means to drive
 2 earnings. Competitive suppliers, on the other hand, maximize profits by running
 3 lean operations and controlling their costs.

4
 5 The best way to sum up my work in both the deregulated wholesale power markets
 6 and the regulated retail markets is that, in the wholesale markets, I get to CUT
 7 rates for my clients. In the regulated retail markets, I can only work to hold down
 8 the monopoly utility requested rate increases.

9
 10 **Q. ARE YOU RECOMMENDING THIS COMMISSION MOVE TO**
 11 **DEREGULATE THE ELECTRIC UTILITY INDUSTRY IN SOUTH**
 12 **CAROLINA?**

13 **A.** No. I realize the current proceeding is not a referendum on deregulation.
 14 However, under the current regulatory model, Duke is not incentivized to lower
 15 costs. It is, instead, incentivized to grow earnings by investing in large amounts
 16 of plant and equipment and raising rates to consumers to pay for the plant and an
 17 associated return. It is the same monopoly model that incentivizes utility plant
 18 investment that led to the VC Summer nuclear fiasco with which this Commission
 19 recently dealt.

20
 21 Table 1 above shows DEP's rate hike equates to 12.50% for a residential
 22 consumer, 14.52% for small general service customers, 6.73% for medium
 23 general service customers, and 9.61% for large general service customers. These
 24 rate hikes are hard for individuals and manufacturers to absorb. Unfortunately, as
 25 rates rise to accommodate DEP's growth plans, the electric cost advantage in
 26 South Carolina will erode and, eventually, become a serious liability to the State.

27
 28 Furthermore, Duke's requested rate increase contributes to its already low
 29 customer satisfaction.

1 **Q. PLEASE EXPLAIN DUKE'S POOR CUSTOMER SATISFACTION**
 2 **RANKINGS AMONGST ITS BUSINESS CUSTOMERS.**

3 A. On Dec. 17, 2018, the *Charlotte Business Journal* published an article entitled
 4 "Duke Energy fails to shine JD Power survey of business customer satisfaction".
 5 The first sentence of the article states:

6

7 Duke Energy Corp.'s Southern (sic) utilities held three of that
 8 region's bottom five places in the rankings for business customer
 9 satisfaction among electric utilities, the latest survey from J.D.
 10 Power shows.
 11

12 Duke's request for substantial rate hikes for both its South Carolina utilities will
 13 do nothing to assuage business customers, particularly in light of the Company's
 14 ongoing operational issues at least resulting fines from two different federal
 15 government entities involving areas for which DEP is seeking rate increases in
 16 this case.
 17

18 **2. Duke's Planned Grid "Updates"**

19 **Q. PLEASE EXPLAIN DEP'S GRID MODERNIZATION REQUEST IN THE**
 20 **CURRENT CASE?**

21 A. Duke has made a very public announcement that it intends to "invest" \$13 billion
 22 to "modernize" the electric infrastructure in the Carolinas over a period of 10
 23 years. According to the testimony of Company Witness Oliver, DEP intends to
 24 invest \$168 million in 2019 and another \$329 million in 2020 on a system-wide
 25 basis.¹ Such expenses would translate into South Carolina retail costs of \$20 and
 26 \$41 million, respectively,² and are just the tip of the iceberg for Duke in its plans
 27 for multi-year rate hikes for its customers.
 28
 29

1 Pre-filed direct testimony of Jay Oliver, page 12

2 Id, page 13

1 **Q. HAS DUKE PREVIOUSLY SUBMITTED REQUESTS FOR GRID**
 2 **MODERNIZATION EFFORTS TO THE SOUTH CAROLINA STATE**
 3 **REGULATORS?**

4 A. No, but the Company has attempted to win legislation in North Carolina for a rate
 5 rider for grid updates and the utility also proposed an identical rate rider in its
 6 2018 rate case before the North Carolina Utilities Commission (NCUC). Duke's
 7 grid investment requests at both the North Carolina Legislature and the NCUC
 8 were rejected.

9
 10 **Q. WHAT IS THE DIFFERENCE IN DUKE'S REQUEST IN THIS CASE**
 11 **VERSUS ITS PREVIOUS REQUESTS IN NORTH CAROLINA?**

12 A. In essence, nothing. The Company is still seeking a pre-approval (similar to that
 13 of the Base Load Review Act) method of compensation. Based on recent media
 14 reports, it is clear that Duke still anticipates spending \$13 billion in grid
 15 investments in the Carolinas. On January 22, 2019, the Charlotte Business Journal
 16 published an article that stated, in part:

17
 18 Duke says the overall scale of the \$13 billion, 10-year program is
 19 still "directionally correct."³
 20

21 In Duke's Q4 earnings call with analysts, Duke CEO Lynn Good admitted that
 22 Duke was going to push its earnings driver regardless of the forum. Below is part
 23 of the transcript from the Q4 earnings call that took place on February 14, 2019:

24 **Shar Pourreza -- Guggenheim Securities LLC -- Analyst**

25 Okay, so that's in there. Okay and then Lynn I know you're
 26 working through a legislation around sort of grid mod and how to
 27 sort of think about potentially getting a rider mechanism, but
 28 assuming legislation doesn't sort of time the well (sic) the way

³ Charlotte Business Journal, January, 22, 2019

1 you're anticipating, you guys are going to be in for serial filings on
 2 an annual basis. So, how should we sort of think about the
 3 spending of that profile, assuming that you don't get legislation,
 4 maybe the commission approves trackers, but if you don't and
 5 you're going to be in rate cases, do you see sort of -- any sort of
 6 downside to that grid mod spend?

7
 8 **Lynn J. Good** -- *Chairman, President and Chief Executive Officer*
 9 You know, Shar, I think the capital we've put in front of you is
 10 capital that we would spend under the rate case scenario as well.
 11 So, we have contemplated both scenarios in our long-term
 12 guidance. So I don't see a lot of downside to grid spend as a result
 13 of what you're describing. (underline added) ⁴
 14

15 Here, DEP is seeking authority to raise rates in three-year forward-looking
 16 increments. At the end of the day, the Company is still seeking massive rate hikes
 17 over 10 years. Company executives simply re-packaged the North Carolina
 18 “Power Forward” proposal, and put a different bow on it.

19
 20 \$13 billion is a huge amount of money for Duke consumers in the Carolinas to
 21 absorb. Executives are so focused on driving earnings through grid investments
 22 that they are not focusing on how these cost increases will negatively impact the
 23 South Carolina economy.

24
 25 The Company proposal for forward-looking three-year rate increases for grid
 26 updates is a Trojan horse. The Company wants the Commission to believe that it
 27 has learned its lesson from its failures in North Carolina for a grid rider and that
 28 it has scaled back its grid investment plans that would hike rates over 50% to
 29 consumers. Consumers are very wary of Duke's real intention in this process and
 30 regulators should be concerned as well.

31
 32

⁴ https://www.duke-energy.com/_/media/pdfs/our-company/investors/news-and-events/2018/4qresults/4q-18-edited-transcript.pdf?la=en

1 **Q. ARE YOU SAYING THAT NO GRID INVESTMENT IS NEEDED?**

2 A. No. I realize that some investment in the grid is warranted. However, the amount
3 that Duke is requesting across the Carolinas is huge and the associated rate hikes
4 are simply job killers. In addition, while the public, in general, supports some
5 form of grid investment, Duke's own internal polling shows that customers do not
6 support the massive rate hikes Duke has in its plans. ⁵

7
8 **Q. WHAT RATE HIKES ASSOCIATED WITH GRID INVESTMENT DOES**
9 **DEP ANTICIPATE?**

10 A. The rate hikes requested by Duke in the current proceeding are just the start of
11 very large rate hikes anticipated by Duke in the future. In this rate case, DEP has
12 asked for a series of increments from 2019 through 2021. Table 2 below provides
13 the individual rate hikes as proposed by DEP in this case and the cumulative rate
14 increases over time.

15
16 Table 2: DEP Proposed Rate Hikes for Grid Investments

Customer Class	% Change					
	Rate Case	Cumulative Inc.	Phase 1	Cumulative Inc.	Phase 2	Cumulative Inc.
Residential	12.50%	12.50%	1.17%	13.82%	1.32%	15.32%
Gen Svc - Small	14.50%	14.50%	1.30%	15.99%	1.47%	17.69%
Gen Svc - Medium	6.70%	6.70%	0.48%	7.21%	0.51%	7.76%
Gen SVC- Large	9.60%	9.60%	0.34%	9.97%	0.35%	10.35%

17 Source: DEP response to SCEUC RTP-2, Wheeler Exhibit No. 3

18
19 As can be seen above, DEP is proposing to layer significant rate hikes on South
20 Carolina consumers should the Commission allows the grid investments to occur.

21
22 The cumulative impact on ratepayers of these rate increases is similar to that of
23 the revised rates under the BLRA for SCE&G.

24
⁵ DEP Response to SCEUC RTP 1-4 Electric Grid Assessment, Final Report, July 6, 2015.

1 **Q. DO YOU HAVE AN ESTIMATE OF THE RATE INCREASES THE**
 2 **COMPANY MAY, ULTIMATELY, ASK THE SOUTH CAROLINA**
 3 **CONSUMERS TO PAY FOR ITS GRID INVESTMENTS?**

4 A. Yes, however, the rate impact on DEP's customers may be greater than DEP
 5 admits. DEP has represented to the NC Legislature that the utility anticipates that
 6 grid mod costs to be much higher. On Feb. 10, 2017, Ms. Kendal Bowman of
 7 Duke Energy made a presentation to the North Carolina Legislative Working
 8 Group and provided the annual rate increases expected by Duke over the next 10
 9 years to pay for its proposed "investment" in grid modernization. Table 3 below
 10 provides these annual rate hikes as stated by Ms. Bowman on Feb. 10, 2017:

11

12 Table 3: Duke Energy Rate Increases for Grid Modernization

Customer Class	Utility	
	DEC	DEP
Residential	4.31%	4.05%
Commercial	1.18%	3.45%
Industrial	2.65%	0.86%

Source: Ms. Kendal Bowman at NC Leg. Working
Group on Feb. 10, 2017

13

14 The above-stated rate hikes were North Carolina-specific, but there is no reason
 15 to doubt that the rate hikes Duke proposes in North Carolina will be substantively
 16 different from its plans in South Carolina.

17

18 Furthermore, as set out from the *Charlotte Business Journal* article of January 22,
 19 2018, these anticipated Duke rate hikes are "directionally correct." In other words,
 20 the Duke rate hikes are going to be substantial and painful for Duke consumers
 21 and hard on the SC economy.

22

1 **Q. CAN YOU PUT THE RATE INCREASES FROM TABLE 3 INTO**
 2 **BETTER PERSPECTIVE IN TERMS OF THE ACTUAL COSTS TO**
 3 **SOUTH CAROLINA CONSUMERS?**

4 **A.** Yes, the above-stated rate impacts are best put into context by translating these
 5 annual rate hikes into a cumulative rate increase over 10 years. Table 4 below
 6 provides the cumulative rate hike percentages expected to be requested by Duke
 7 for the grid updates.

8
 9 Table 4: Cumulative Rate Increase for Duke's
 10 Proposed Grid Investments
 11

Customer Class	Utility	
	DEC	DEP
Residential	52.50%	48.74%
Commercial	12.45%	40.38%
Industrial	29.89%	8.94%

P. 12 of Duke presentation of 2-10-17
 calls for 10-year grid program

12
 13 The above percentage rate change increases can be further granulated into annual
 14 cost increases for Duke customers over the life of Duke's proposed 10-year roll-
 15 out of its grid update plans. Table 5 below provides the cumulative cost increases
 16 associated strictly with Duke's grid updates.

17
 18 Table 5: Per Customer Cost for Duke Grid Updates

\$13 Billion Spend		
Customer Class	Utility	
	DEC	DEP
Residential	\$3,777	\$3,726

Commercial	\$174,982	\$613,056
------------	-----------	-----------

Industrial	\$11,993,265	\$4,194,747
------------	--------------	-------------

For residential consumers, the above table assumes a consumption of 1,100 kWhs per month using the average DEP residential cost in South Carolina as reported by the EIA. For commercial consumers, the table was constructed using a 500 kW load with a 70% load factor and a corresponding EIA average cost. Lastly, the industrial values were calculated using a 20 MW load, an 85% load factor, and cost data as reported by EIA.

The above-stated cost increases are massive. Residential consumers are looking at cost increases of close to \$4,000. Commercial consumers are looking at cost increases over \$613,000. Industrial consumers are faced with cost increases of close to \$4.2 million. For industrial consumers, a \$4.2 million cost increase over 10 years represents a single year payroll for approximately 50 persons earning an average of \$80,000 per year. There is no doubt, the cost impact on the South Carolina economy will be incredibly hard and painful.

Q. WHAT MARKETING SURVEYS HAS DUKE COMPETED TO ASSESS CUSTOMER INTEREST?

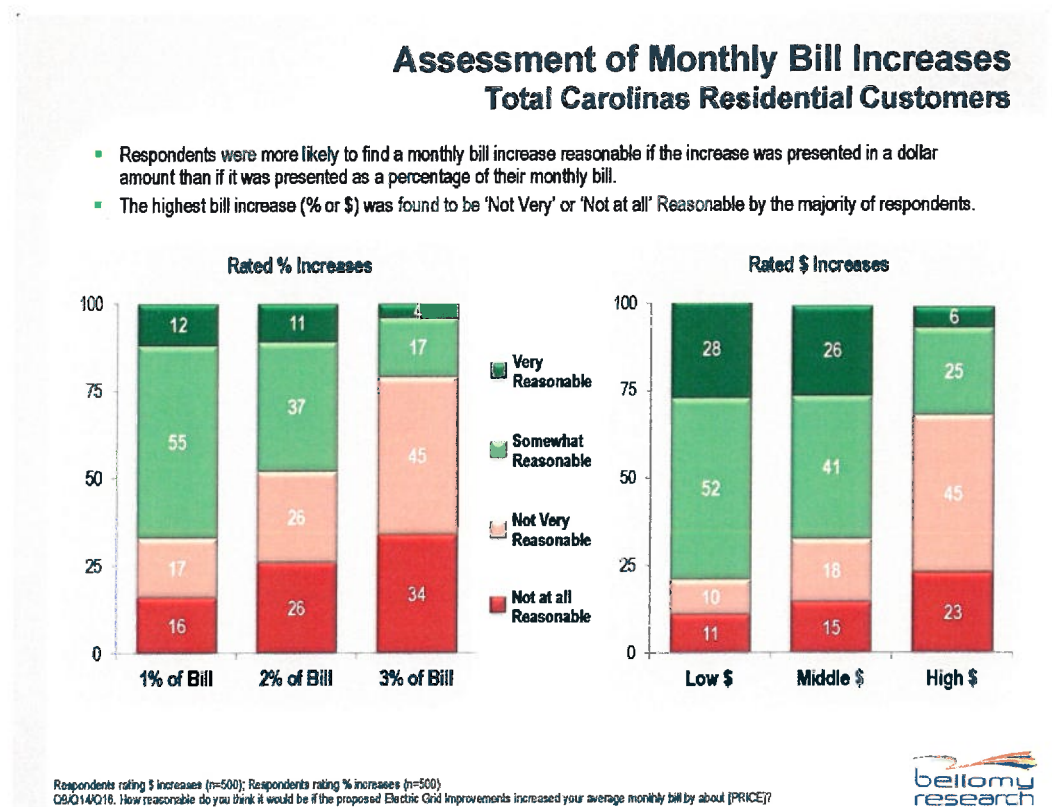
A. Yes. Duke performed a customer survey on its grid investment plans and knew, way back in 2015, that customers were opposed to the massive rate hikes proposed to pay for its grid investments.

On July 6, 2015, Bellomy Research presented the findings of its marketing survey regarding Duke's "Electric Grid Improvements."⁶ While most individuals indicated they were in favor of an improved grid, the data below shows consumers have their limit. Specifically, the data below shows that 79% polled found Duke's

⁶ DEP Response to SCEUC RTP1-4 Electric Grid Assessment, Final Report, July 6, 2015

grid improvements were “not very reasonable” or “not at all reasonable” when the cost increase was 3% per month (see Chart 3).

Chart 3: Duke Customer Survey



If 79% of respondents feel that 3% is too much to pay for the grid updates, common sense dictates an overwhelming percentage of consumers would be opposed to the 48.7% rate hike as calculated by the material presented by Ms. Bowman before the North Carolina General Assembly.

Q. DO YOU HAVE ANY WAY TO MEASURE WHAT CONSUMERS MAY RECEIVE AS PART OF DUKE’S PLANNED GRID INVESTMENTS?

A. Yes. According to the testimony of Witness Jay Oliver, DEPs System Average Interruption Duration Index (SAIDI) was 150 at the end of 2017.⁷ According to

⁷ Figure 2 of Prefiled Testimony of Jay Oliver, page 21

1 testimony from the DEC case in North Carolina, the goal of Duke's grid
 2 investment plan is to reduce outages times 40% to 60%. ⁸ If DEP is successful in
 3 reaching this goal, the Company would reduce its outage times from 150 to
 4 approximately 75, meaning that consumers would get an extra 1 hour and 15
 5 minutes of power for Duke's grid investments.

6
 7 Furthermore, Mr. Oliver appears to be incorrect in his assertion that the SAIDI
 8 and SAIFI values for DEP are getting worse over time. Indeed, the SAIFI values
 9 for DEP show the frequency of outages has decreased (has improved) over the
 10 past 10 years. The SAIDI indicated the annual outage duration has increased by
 11 only 25 minutes over the past ten years. The SAIDI and SAIFI values as found in
 12 Mr. Oliver's testimony do not support the massive rate hikes Duke is proposing
 13 for its grid investments.

14
 15 Based on the SAIDI and SAIFI graphs in Mr. Oliver's testimony, it appears that
 16 the grid modernization costs proposed by Duke are answers in search of a
 17 problem.

18
 19 **Q. HAS DUKE PUBLICLY ANNOUNCED THE RATE HIKES IT**
 20 **ANTICIPATES FROM ITS PROPOSED GRID INVESTMENTS?**

21 **A.** Below is interrogatory and DEP's response to the interrogatory on this issue:

22
 23 **Request:**

24
 25 1-6 Please set out and describe any and all communications
 26 to both North Carolina and South Carolina consumers in regard
 27 to grid modernization rate impacts presented by Duke Energy in
 28 any public setting.
 29
 30

⁸ Testimony of Caroline Golin before the North Carolina Utilities Commission in Docket NO. E-7, Sub 1146, page 13

Response:

In South Carolina, witnesses Bateman and Smith provide estimated revenue requirements for the DEC and DEP's proposed Grid Improvement Plans in their respective direct, pre-filed testimony in this matter, however the estimated rate impacts to the various customer class was not included.

I chose to provide the Commission the above-stated request and response as it shows the Company has no intention of providing the general public the true cost of its grid investment plans.

With 79% of survey respondents opposing a 3% rate hike, and Duke is proposing hikes as much as 50%, there is little wonder why Duke has been silent on the massive costs associated with its grid investments.

The real question Duke should have asked consumers in its customer survey was whether the typical residential customer is willing to pay upwards of \$4,000 to achieve the potential for 1 hour and 15 minutes more of power each year. I am confident the answer to that question would be a resounding no.

Q. DOES DUKE CURRENTLY RECOVER THE COST FOR MAINTAINING AND IMPROVING RELIABILITY?

A. Yes, Duke currently collects in its rates charges to support the maintenance of the bulk electric system. Unfortunately, it appears that consumers are not getting a good bargain on the grid investments for which we are already paying Duke. On February 1, 2019, *The Wall Street Journal* reported that Duke was recently fined \$10 million by the North American Electric Reliability Council (NERC) for safety and reliability violations. The article was entitled "Duke Energy Broke Rules Designed to Keep Electric Grid Safe." The first two sentences of the article state as follows:

1 Duke Energy Corp. DUK +0.52% faces a record \$10 million fine
 2 from federal authorities for serious and pervasive violations of
 3 rules designed to keep the nation's electric system safe from
 4 physical and cyber attacks, according to people familiar with the
 5 matter.

6
 7 Some violations lasted for years; others apparently are continuing,
 8 according to the people and newly released documents in a federal
 9 regulatory filing.

10 The article goes on to state:

11 It (Duke) committed 127 violations of safety rules, federal
 12 investigators said, which "posed a serious risk to the security and
 13 reliability" of the eastern interconnection, the web of electric
 14 utilities east of the Rocky Mountains that furnishes electricity to
 15 most Americans.

16 In regard to foreign entities possibly infiltrating the Duke system, the *Wall Street*
 17 *Journal* states:

18
 19 The revelation of the extensive cybersecurity breakdown at a major
 20 utility comes as federal authorities are increasingly vocal about
 21 efforts by foreign actors, including those in Russia, to hack into
 22 U.S. utilities.
 23

24 It is clear from the news as reported by *The Wall Street Journal*, Duke has not
 25 been a good steward of customer revenues paid it for grid reliability. Allowing
 26 Duke multiple rate hikes totaling \$13 billion in the Carolinas and then hoping it
 27 can correct its mismanagement is simply a poor investment. Duke should be
 28 made to prudently operate the system it has before asking consumers for
 29 even more money.
 30

31 **Q. PLEASE EXPLAIN DUKE'S REQUEST IN THIS RATE CASE FOR**
 32 **COST RECOVERY OF ITS PROPOSED GRID INVESTMENTS.**

33 **A.** In its application of this case, Duke is seeking a pre-approval plan for its grid
 34 investments. Duke's grid plan is, for all practical purposes, the Base Load Review
 35 Act (BLRA) as applied to distribution and transmission investment. This

Commission knows full well the economic impact that rate hikes and associated economic fallout have had on citizens in the State of South Carolina.

Q. DO YOU HAVE ANY EVIDENCE TO SUPPORT YOUR BELIEF THAT DUKE'S OBJECTIVE WITH ITS GRID INVESTMENT PLAN IS TO DRIVE EARNINGS?

A. Yes. The business model for any electric utility is that it has two ways of making money in the future. First, the utility can remain as a pure monopoly and drive earnings through capital investment to be paid by captive ratepayers. Secondly, the utility can venture into unregulated activities and take the same risks as do all other companies. Duke has made a concerted effort to remove itself from virtually all aspects of unregulated activities as evidenced by the sale of its international businesses in 2016 and its unregulated Midwest generation business in 2014. Duke further entrenched its operations as a pure territorial monopoly business when it purchased Piedmont Natural Gas with its existing territorial monopoly operations in the Carolinas. By making these moves, Duke has chosen to be a monopoly utility as opposed to trying to survive in competitive markets.

By moving more towards becoming a pure territorial monopoly business, Duke executives realize their best way to drive their earnings is to ask for continuous rate hikes from captive South Carolina consumers to pay for plant investments. Evidence for this statement can be seen in the June 15, 2017 edition of the S&P Global Market Intelligence Financial Focus report on Duke Energy which states (in part):

With unmatched scale and the largest capital expenditure program in the industry, Duke Energy might be considered the leading infrastructure investment in the country at an opportune time, politically speaking. Following the exit from its Brazilian and remaining Latin American operations last year, and its acquisition of Piedmont Natural Gas, Duke has transitioned to a pure domestic infrastructure business. To recapture its earnings growth of years

1 past and allow higher capital deployment, however, timely rate
2 case execution is paramount.⁹

3
4 This same report goes on to state the following:

5
6 Additionally, Duke is working to advance legislation in the
7 Carolinas — its primary service territory — that would improve
8 regulatory cost recovery mechanisms and reduce regulatory lag,
9 and could be an important earnings growth driver in years ahead.¹⁰

10
11 This last statement reflects Duke's failed attempt to obtain legislation in the 2017
12 long session in North Carolina that would have required North Carolina
13 consumers to pay upfront for Duke's grid expansion.

14
15 The same S&P report cited above goes on to state:

16
17 Over the next five years, Duke plans to spend \$37 billion across its
18 business platform to drive robust consolidated adjusted
19 earnings growth of 4%-6% annually. (underline and bold
20 added)¹¹

21
22 Duke CEO Lynn Good further admitted the goal to drive earnings by stating the
23 following to the Barclays CEO Energy-Power Conference in New York

24
25 It is also important that we pursue regulatory and legislative
26 initiatives that underpin our ability to deliver returns and turn those
27 investments into cash and returns to shareholders¹² (underline
28 added)

29
30 **Q. DOES DUKE HAVE THE RESOURCES TO PURSUE A LEGISLATIVE**
31 **INITIATIVES AS SUGGESTED BY MS. GOOD?**

32 **A.** Yes. See Table 6 below.

9 S&P Global Market Intelligence Financial Focus, June 15, 2017

10 id

11 id

12 *Charlotte Business Journal*, Sept. 7, 2017, 1

1

Table 6: Political Contributions of Duke Energy

Organization	Invoice Amount	Amt Alloc to DEC	Purpose
South Carolina Chamber of Commerce	\$ 31,000	\$ 4,712	Membership dues (lobbying portion)
South Carolina Manufacturers Alliance	\$ 20,000	\$ 5,400	Membership dues (lobbying portion)
SC Business & Ind Political Education Com	\$ 10,000	\$ 7,500	2016 Membership dues
SC House Democratic Caucus	\$ 5,000	\$ 3,800	2016 Membership dues
SC House Democratic Caucus	\$ 5,000	\$ 3,800	2016 Contribution
SC House Republican Caucus	\$ 5,000	\$ 3,800	Business roundtable membership dues
SC House Republican Caucus	\$ 5,000	\$ 3,800	Sponsorship of 2016 Legislative Classic
South Carolina Senate Democratic Caucus	\$ 5,000	\$ 3,800	2016 Senate Democratic Caucus member prog
South Carolina Senate Democratic Caucus	\$ 5,000	\$ 3,800	Sponsorship
South Carolina Republican Caucus	\$ 5,000	\$ 3,800	2016 Membership dues
South Carolina Republican Caucus	\$ 5,000	\$ 3,800	Sponsorship
Blue Ridge Electric Cooperative	\$ 4,500	\$ 3,420	Dinner sponsorship
SC Legislative Black Caucus	\$ 3,500	\$ 2,660	Corporate Roundtable 2016 membership
The Riley Institute - Furman University	\$ 2,500	\$ 1,900	Legislative & civic awards dinner
South Carolina Manufacturers Alliance	\$ 2,000	\$ 1,520	Heritage Legislative Event
South Carolina Manufacturers Alliance	\$ 1,942	\$ 1,476	Heritage Legislative Reception
American Legislative Exchange Council	\$ 1,500	\$ 1,140	ALEC Scholarship Fund
Capital Commission	\$ 1,500	\$ 1,140	Legislative Golf sponsorship
Collins Home & Family Ministries	\$ 1,500	\$ 1,500	Golf Tournament sponsorship
Total South Carolina Political Donations	\$119,942	\$ 62,768	

2 Source: North Carolina Utilities Commission Docket No. M-100 Sub 150, filing of NC WARN, 2-8-19

3

4 Certainly if Duke can persuade the General Assembly to pass grid legislation, it
5 should do so. Until then, however, the Commission should deny Duke's request.

6

7 **Q. IS THE DECISION BY DUKE MANAGEMENT TO FOCUS ON GRID**
8 **EXPANSION UNIQUE TO DUKE OR IS IT AN INDUSTRY TREND?**

9 A. Grid "modernization" efforts are an industry trend. Electric utility load growth is
10 much flatter than in recent years and this lack of sales has caused utilities across
11 the country to search for new ways to drive earnings. On November 8, 2017,
12 Bloomberg published an article entitled "No Sales Growth? No Problem! Utilities

1 See Money in Grid Repairs.” The article succinctly captures the grid
2 “modernization” efforts in the following statement:

3
4 Utilities make money by investing in wires, poles, substations and
5 power plants and getting a guaranteed return by their regulators on
6 those investments. But as demand for electricity has flat-lined for
7 nearly a decade, companies are finding it harder to justify just
8 building more stuff for growth. So now, they’re talking about
9 making the grids they do operate more efficient and flexible, which
10 also happens to cost money.¹³
11

12 So, in essence, Duke management has realized that, to continue to grow earnings,
13 it has to stop focusing on building new generation plant and, instead, build
14 something else. In this case, the “something else” is grid “modernization” plant.
15 The core questions for this Commission is whether Duke’s massive grid efforts
16 are needed and if so are they cost beneficial and prudent expenditures for South
17 Carolina consumers.
18

19 Manufacturers, in particular, stand to be hurt by these Duke grid updates as they
20 will simply be forced to absorb these massive rate increases.
21

22 **Q. DO YOU BELIEVE DUKE’S PROPOSED GRID INVESTMENTS WILL**
23 **“STIMULATE ECONOMIC GROWTH” AS CLAIMED BY DUKE IN ITS**
24 **APRIL 12, 2017 PRESS RELEASE TOUTING ITS GRID INVESTMENT**
25 **PLANS?**

26 **A.** No. When Duke makes statements about “investments” in South Carolina, it is
27 important to note that Duke expects to recover those investments from captive
28 consumers in the State and to earn a handsome return on those same investments.
29 Duke’s discussion about economic growth from grid investments is a one-sided
30 story because Duke fails to mention the economic harm due to the high cost of
31 Duke’s unnecessarily high grid updates.

¹³ Bloomberg, Nov. 8, 2017, “No Sales Growth? No Problem! Utilities See Money in Grid Repairs”

1 This Commission need only look to the situation at the VC Summer Nuclear plant
 2 and the BLRA to see an example of the perils of accepting utility promises of
 3 economic growth via large plant investments.

4
 5 Perhaps DEP management is hoping state legislators and this Commission have
 6 a short memory as to the Summer fiasco.

7
 8 **Q. IS DUKE WILLING TO GUARANTEE CONSUMERS WILL REALIZE A**
 9 **REDUCTION IN OUTAGES FROM ITS REQUESTED GRID**
 10 **INVESTMENT STRATEGY?**

11 **A.** No. In a data request, SCEUC asked if DEP could provide any guarantee that its
 12 grid investment plans would reduce outages. Duke refused to guarantee its grid
 13 investments will reduce outages. ¹⁴

14
 15 Duke's unwillingness to offer any assurances for improved grid reliability is like
 16 an auto manufacturer asking you to buy an expensive new car without any
 17 warranty.

18
 19 **Q. IS RELIABILITY IMPORTANT?**

20 **A.** Absolutely. When a power outage occurs, manufacturers typically go off-line and
 21 lose product. Even a short outage can result in product losses. However, there is
 22 a limit to the level of higher rates manufacturers can support to offset
 23 POTENTIAL reductions in outages. The cost increases found in Table 5 above
 24 show a 20 MW customer would see an increase of \$4.2 million to pay for DEP's
 25 planned grid investments. Such a cost increase would damage the
 26 competitiveness of SC manufacturers, thereby putting many South Carolina jobs
 27 at risk.

28

¹⁴ DEP response to SCEUC ROG Set 1-4

1 **Q. HOW ARE OTHER STATES HANDLING GRID “MODERNIZATION”**
 2 **INVESTMENT EXPENSES?**

3 A. The North Carolina Clean Energy Technology Center (NCCETC), which is
 4 housed at North Carolina State University, publishes a quarterly report entitled
 5 “The 50 States of Grid Modernization.” In my review of grid expense reports
 6 from across the country, this NCCETC report is the most up-to-date and complete
 7 authoritative report on grid actions around the country.

8
 9 The NCCET publication states the following in regard to studies and
 10 investigations ongoing around the country in regard to grid investments.

11

12 **STUDIES AND INVESTIGATIONS**

13 **Key Takeaways:**

14 □ In Q3 2018, 27 states plus DC took action to study or investigate
 15 issues related to grid modernization, energy storage, utility
 16 business models, and rate reform.

17 □ Two states – Ohio and Oregon – completed grid modernization
 18 studies during Q3 2018, while draft reports were released in Illinois
 19 and Louisiana.

20 □ Most studies are emphasizing stakeholder engagement, policy
 21 recommendations, and the development of next steps.

22

23 Many of the states addressing grid modernization are citing a need
 24 for greater information to inform the legislative and regulatory
 25 processes. Many states do not yet have significant experience with
 26 grid modernizing technologies, and in some cases, these
 27 technological advancements are prompting an examination of the
 28 state’s overall vision for the electric grid and an analysis of
 29 potential policy mechanism to achieve that vision. State have
 30 proposed a broad range of studies and investigations of both the
 31 technology and policy side of grid modernization depending on
 32 their specific need.¹⁵

33

34 The NCCETC’s “The 50 States of Grid Modernization”, Q3 2018 then goes on to provide
 35 individual details of state actions regarding grid investments.

¹⁵ The 50 States of Grid Modernization: Q3 2018 Quarterly Report, p. 18

1 **Q. DID YOU FIND ANY COMMON THEMES AMONGST THE VARIOUS**
 2 **STATE EFFORTS?**

3 A. Yes. The one overriding theme I found in my analysis of various state actions is
 4 that of transparency and public involvement.

5
 6 **Q. DO YOU HAVE A RECOMMENDATION TO THIS COMMISSION IN**
 7 **REGARD TO DUKE'S PLANNED TRANSMISSION AND**
 8 **DISTRIBUTION INVESTMENT PLANS?**

9 A. Yes. As has been done in other states, I recommend the Commission open a
 10 separate public docket to investigate the need for Duke's proposed grid
 11 investments. Given the complex engineering nature of grid investments, I also
 12 recommend that a qualified independent engineering firm be retained by the
 13 Commission to assist it in reviewing all the technical details of Duke's grid plans.

14
 15 In that docket, I suggest the Commission examine the following issues, among
 16 others, involving grid updates for DEP:

- 17
 18 1. Is the Duke plan for grid investments needed for reliability purposes?
 19 2. How many hours of reduction of outages will DEP customers receive with
 20 the implementation of its various grid investments?
 21 3. How much will the outage improvement, assuming it occurs, cost
 22 consumers?
 23 4. Is Duke's grid update plan cost-effective?
 24 5. How are other states handling grid investment updates?
 25 6. What are the lessons learned from other states?
 26 7. How will the State's renewable energy industry be impacted by DEP's
 27 planned grid investments? and
 28 8. How will the rate increases expected under Duke's plan affect the State's
 29 economy?
 30

1 Issue 4 above is noteworthy. To be specific, Duke's grid modernization is going
 2 to cost residential consumers upwards of \$4,000. How many hours of outage
 3 reductions will consumers receive for their \$4,000? Are consumers willing to pay
 4 \$4,000 for this extra outage reduction ON TOP of the amount they are already
 5 paying in current rates for O&M on the grid? Certainly, manufacturers would be
 6 unwilling to pay \$4.2 million for little-to-no benefit.

7
 8 Furthermore, the price of batteries continues to fall. A 5-kW Tesla Powerwall,
 9 for example, costs \$8,000 installed.¹⁶ It is illogical to spend \$4,000 with Duke
 10 and still endure outages when the consumer could spend \$8,000 and be assured of
 11 almost no interruptions (and Duke would not be charging a rate of return on the
 12 battery, since it would be owned by the customer).

13
 14 Duke has had customer meetings to engage stakeholders in the grid investment
 15 process. However, the general public has not been involved in these meetings.
 16 As an example, there is no doubt the public is unaware that the Duke grid plan
 17 could increase costs by \$4,000 and upwards of \$4 million for a single
 18 manufacturer. As is done with public hearings before rate cases, I suggest Duke
 19 be required to have town hall meetings throughout its territory to discuss the
 20 benefits AND COSTS of its grid investment plan. If the rate increases in excess
 21 of 50% are "directionally correct", consumers need to know this information so
 22 they can plan accordingly.

23
 24 **Q. DID DUKE PRESENT A COST BENEFIT STUDY FOR ITS GRID**
 25 **INVESTMENTS IN THE CURRENT DOCKET?**

26 **A. Yes.**
 27
 28
 29

¹⁶ <https://www.energysage.com/solar/solar-energy-storage/tesla-powerwall-home-battery/>

1 **Q. DO YOU HAVE ANY CONCERNS ABOUT THE STUDY?**

2 A. Yes. The cost benefit study was presented in the testimony of Company Witness
3 Jay Oliver and consists of three pages (pages 35-37) of a written description and
4 four exhibits. In his exhibits, Mr. Oliver cites three different grid update plans:
5 the Integrated Volt/Var (IVVC) program; the Self-Optimizing Grid program; and
6 the Transformer Retrofit program. Each of these programs has a different cost-
7 to-benefit ratio but each of them also presents many unanswered questions.

8
9 For example, the IVVC program cites avoided variable O&M. Unfortunately, the
10 details of what is avoided and the exact amounts of what is avoided is not found
11 in the exhibits. Locational details are found in Mr. Oliver's exhibits, but there is
12 no detail of exactly how DEP developed the associated costs or benefits. The
13 2018 Grid Improvement Plan as filed by Mr. Oliver in this case contains charts,
14 tables, and graphs but it is weak in providing the details necessary to dissect the
15 details of the benefit-to-cost ratios as outlined in Mr. Oliver's testimony.

16
17 Based on the material presented by Mr. Oliver, Duke wants this Commission to
18 grant it rate increases that may total as much as \$4.2 million over 10 years to the
19 typical manufacturer and upwards of \$4,000 to the typical residential consumer.
20 Duke's poorly presented cost/benefit study is one more reason the Commission
21 should deny Duke's request and open a docket in this matter and retain an
22 independent engineering firm to assist it with its analysis.

23
24 **Q. HAS ANY OTHER ATLANTIC COAST STATE RECENTLY RULED ON**
25 **A GRID INVESTMENT PLAN FOR ITS LOCAL UTILITIES?**

26 A. Yes, On Jan. 27, 2019, the Virginia State Corporation Commission (VA SCC)
27 ruled on the request of Dominion Virginia Power (DVP) on its proposed grid
28 investment plan. The VA SCC ruled against the proposed DVP plan and, in part,
29 stated the following:

30

1 Dominion's proposed Plan is expensive, so it is important that
 2 Dominion's customers receive adequate benefit for the costs they will
 3 bear in their monthly bills. If the total Plan were approved, the cost to
 4 customers — the lifetime revenue requirement of these investments
 5 — will be approximately \$6.0 billion, including financing costs, to be
 6 recovered from customers over the lives of the various components
 7 that range from five to 55 years.

8
 9 The Plan is large and multi-faceted and many elements are not
 10 necessarily related to others, so below we consider the Plan's elements
 11 in four major categories of related elements. These categories and the
 12 costs of each are as follows: (i) Cyber and Physical Security and
 13 Telecommunications (total costs: \$910.3 million; Phase I costs:
 14 \$154.5 million); (ii) Advanced Metering Infrastructure and related
 15 elements (total costs: \$1.3 billion; Phase I costs: \$696.8 million); (iii)
 16 Intelligent Grid Devices, Operations and Automated Control
 17 Systems, and Emerging Technology (total costs: \$776.0 million;
 18 Phase I costs: \$157.5 million); and (iv) Grid Hardening (total costs:
 19 \$3.0 billion; Phase I costs: \$486.1 million). After consideration of the
 20 entire record, we find that Dominion has proven that the costs of the
 21 elements in the Cyber and Physical Security category are reasonable
 22 and prudent and are approved, as well as some of the
 23 Telecommunications elements. We find that Dominion has not
 24 proven that the costs for the Plan elements in categories (ii), (iii), and
 25 (iv) are reasonable and prudent. These parts of the Plan are not
 26 approved. This disapproval is without prejudice and Dominion may
 27 re-file for approval of certain elements in a future proposed plan that
 28 complies with the requirements set forth below.¹⁷
 29

30 The Virginia State Corporation Commission made the same determination that I am
 31 recommending in this case and that is, a THOROUGH AND DETAILED analysis of
 32 the DEP request in this case is warranted. Before South Carolina enacts broad and
 33 sweeping regulatory policy changes, a detailed analysis of the costs and benefits of
 34 the Duke proposal must be performed.

35
 36 Duke executives have already promised strong earnings to stockholders from grid
 37 investments. These same executives have not yet persuaded citizens of South
 38 Carolina that such investments are warranted. Indeed, these executives have not even
 39 begun trying to persuade consumers to open their wallets for such massive rate
 40 increases. I urge the Commission to do its full due diligence and reject the grid

¹⁷ Virginia State Corporation Commission Case No. PUR-2018-00100, pages 5-6

modification requests. Duke should be allowed to petition to open a separate docket to consider the Company's proposal wherein this Commission may completely and thoroughly examine the costs and benefits of grid updates as proposed by DEP.

3. Coal Ash Costs

Q. MR. O'DONNELL, PLEASE EXPLAIN THE BACKGROUND THAT HAS LED DEP TO REQUEST RECOVERY OF \$200 MILLION OF COAL ASH COSTS IN THIS CASE.

A. On February 2, 2014, DEC spilled a large amount of coal ash in the Dan River. This spill made the national press. The Dan River spill will be cleaned up with Duke stockholder funds. Information exposed in the Duke federal plea deal, which is described below, revealed that on two separate occasions, Duke engineers at the Dan River plant requested an immaterial amount of budget funding to pay for video equipment to scope the pipe that later failed. Duke engineers were denied the request.¹⁸

On September, 2014, in response to the Dan River spill, the North Carolina Legislature passed the Coal Ash Management Act (CAMA) that required the closure of existing coal ash ponds as well as conversion from wet ash to dry ash handling. CAMA was the first such coal ash management law in the United States. This initial legislation required basins at four Duke plants to be closed by 2019.

On December 19, 2014, the EPA issued the Coal Combustion Residual (CCR) Order that provided minimum national criteria for CCR landfills, CCR surface impoundments, and lateral expansion of coal-fired units. The CCR federal rule was designated as "self-implementing," meaning that Duke was not under any requirement to act UNLESS it is sued by a state or other entity and loses that lawsuit.

¹⁸ United States District Court for Eastern District of North Carolina, Case Nos. 5:15-CR-62-H, 5:15-CR-67-G, 5:15-CR-68-H, ordering paragraphs 69-80

1 On May 14, 2015, Duke Energy Carolinas, Duke Energy Progress, and Duke
 2 Energy Business Services pled guilty to nine violations of the Clean Water Act
 3 and was fined \$102 million by the federal courts¹⁹. Below are some of the issues
 4 to which Duke admitted guilt:

- 5
- 6 • From at least January 1, 2012, Duke Energy Carolinas and Duke Energy
 7 Business services failed to properly maintain and inspect the two storm
 8 water pipes underneath the primary coal ash basin at the Dan River Steam
 9 Station in Eden, North Carolina. On February 2, 2014, one of those pipes
 10 failed, resulting in the discharge of approximately 27 million gallons of
 11 coal ash wastewater and between 30,000 and 39,000 tons of coal ash into
 12 the Dan River²⁰
- 13 • Duke Energy Progress and Duke Energy Business Services also failed to
 14 maintain the riser structures in two of the coal ash basins at the Cape Fear
 15 Steam Electric Plant, resulting in the unauthorized discharges of leaking
 16 coal ash wastewater into the Cape Fear River.²¹
- 17 • Additionally, Duke Energy Carolinas and Duke Energy Progress's coal
 18 combustion facilities throughout North Carolina allowed unauthorized
 19 discharges of pollutants from coal ash basins via "seeps" into adjacent
 20 waters of the United States.²²
- 21 • The Defendants' conduct violated the Federal Water Control Act
 22 (commonly referred to as the "Clean Water Act," or "CWA"). 33.U.S.C.
 23 1251. ²³
- 24

¹⁹ United States DE Ct. of Justice press release, May 14, 2015, 1

²⁰ United States District Court for Eastern District of North Carolina, Case Nos. 5:15-CR-62-H, 5:15-CR-67-G, 5:15-CR-68-H, 2

²¹ Id at 3

²² Id at 3

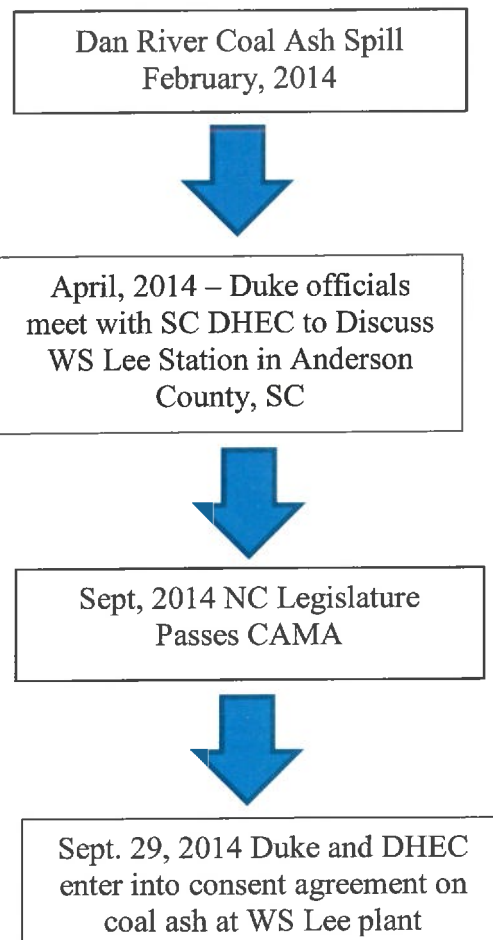
²³ Id at 4

Below is what an official with the United States Environmental Protection Agency said about Duke officials and coal ash:

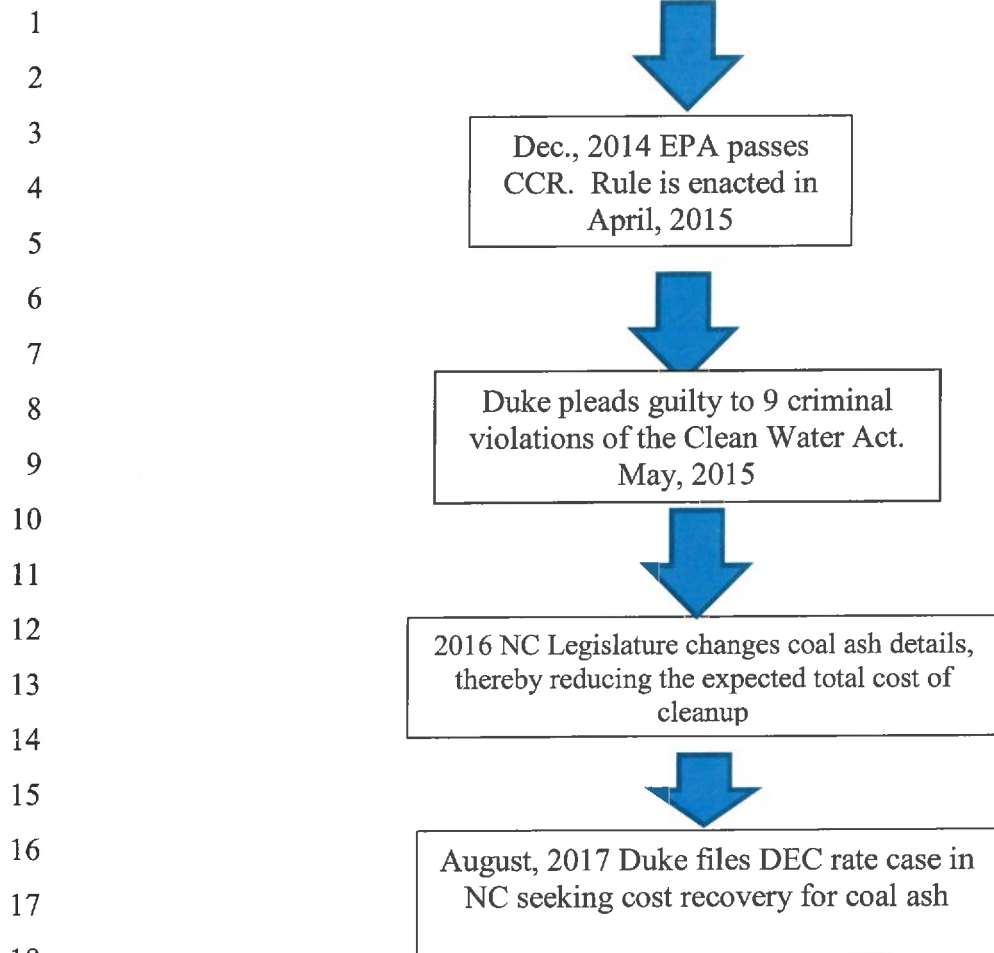
"Duke management failed in their responsibility to the people of North Carolina. Their criminal negligence is what caused this disaster," said Cynthia Giles, assistant administrator for enforcement for the U.S. Environmental Protection Agency.²⁴

Chart 4 below shows the milestone dates for the Duke coal ash situation from the spill at Dan River to the current rate case recovery request.

Chart 4: Duke Coal Ash Timeline



²⁴<http://www.wral.com/duke-energy-pleads-guilty-to-environmental-charges-linked-to-coal-ash-spill-leaks/14645414/>



20 **Q. DOES DUKE BELIEVE IT IS ENTITLED TO 100% RECOVERY OF ALL**
21 **COAL ASH EXPENSES?**

22 A. Yes, with the exception of the Dan River spill clean-up costs and fines. Duke
23 maintains that its coal ash expenses are being incurred as a normal course of its
24 business operations and, as such, ratepayers should pay these costs entirely.

25

26 **Q. CAN YOU PROVIDE ANY EVIDENCE THAT THE NORTH CAROLINA**
27 **CAMA LEGISLATION WAS PROMPTED BY THE DAN RIVER SPILL?**

28 A. Yes. Below is a portion of an article that cites two legislators in North Carolina
29 that demonstrate CAMA was a direct result of the Dan River spill.

30

1 According to one of Duke Energy's top leaders, North Carolina's
2 2014 coal ash legislation didn't necessarily result from a company
3 ash spill in the Dan River.

4
5 Federal coal ash rules were already being drafted at the time, and
6 it's possible, Duke state President David Fountain testified
7 Monday during a rate increase hearing, that the North Carolina
8 General Assembly would have passed its law anyway.

9
10 Twice, Sierra Club attorney Matthew Quinn asked Fountain
11 whether the law was motivated, or partially motivated, by a spill
12 that turned parts of the river gray.

13
14 "I really can't admit that," Fountain replied.

15
16 State Rep. Pricey Harrison, D-Guilford, who saw her push for coal
17 ash regulations gain traction only after the spill, scoffed at this
18 Monday evening. When the bill passed in 2014, Senate negotiator
19 Tom Apodaca specifically said that, "When I saw the Dan River
20 thing, I said, 'We've got to do something.'" State Rep. Chuck
21 McGrady, R-Henderson, who negotiated the bill for the
22 House, told the Associated Press that, "unfortunately, sometimes
23 we wait until we have a really big problem before we address it."

24 "It makes sense for (Fountain) to say that, but he is flat wrong,"
25 Harrison said Monday. ²⁵

26 The importance of the above article should not go unnoticed by this Commission.
27 Two elected officials in North Carolina of opposing parties BOTH contradicted
28 the Duke executive.

29
30 **Q. DO YOU AGREE WITH DUKE'S POSITION THAT CONSUMERS**
31 **SHOULD PAY ALL THE COSTS OF CLEANUP?**

32 **A.** No. Duke management made specific decisions that resulted in the coal ash spill
33 in North Carolina that, in turn, led to the creation of the Coal Ash Management

²⁵ <http://www.wral.com/seeking-rate-increase-duke-energy-dodges-link-between-coal-ash-spill-and-coal-ash-bill/17145054/>

1 Act (CAMA). My analysis in North Carolina is that Duke stockholders should
 2 pay 75%.

3
 4 **Q. CAN YOU PUT DUKE'S COAL ASH COSTS INTO PERSPECTIVE**
 5 **RELATIVE TO OTHER UTILITIES AROUND THE COUNTRY?**

6 **A.** Yes. Using data obtained from SNL Financial, I extracted AROs on the books of
 7 utilities from across the country. I then ranked the utilities by AROs from largest
 8 to smallest.

10 Table 7: Total AROs

Company Name	ARO 2017
Duke Energy Progress, LLC	\$ 4,673,454
Duke Energy Carolinas, LLC	\$ 3,609,220
Georgia Power Company	\$ 2,637,679
DTE Electric Company	\$ 2,124,863
Florida Power & Light Company	\$ 2,030,679
Alabama Power Company	\$ 1,583,682
Virginia Electric and Power Company	\$ 1,365,061
Indiana Michigan Power Company	\$ 1,321,774
Entergy Arkansas, LLC	\$ 981,213
Duke Energy Indiana, LLC	\$ 781,284
Duke Energy Florida, LLC	\$ 741,078
Arizona Public Service Company	\$ 670,719
Kansas Gas and Electric Company	\$ 343,408
Kansas City Power & Light Company	\$ 266,280
Kentucky Utilities Company	\$ 234,929
PacifiCorp	\$ 214,901
Mississippi Power Company	\$ 173,851
Portland General Electric Company	\$ 166,979
Public Service Company of New Mexico	\$ 145,707
Gulf Power Company	\$ 142,292
Appalachian Power Company	\$ 124,979
Southwestern Electric Power Company	\$ 92,758
Nevada Power Company	\$ 79,819
ALLETE (Minnesota Power)	\$ 77,391
Oklahoma Gas and Electric Company	\$ 75,106

Westar Energy (KPL)	\$	61,709
Public Service Company of Oklahoma	\$	54,015
Kentucky Power Company	\$	51,238
Tampa Electric Company	\$	47,370
Tucson Electric Power Company	\$	45,356
Monongahela Power Company	\$	41,782
KCP&L Greater Missouri Operations Company	\$	34,772
Southwestern Public Service Company	\$	28,524
Idaho Power Company	\$	26,415
Empire District Electric Company	\$	21,287
Entergy Mississippi, LLC	\$	9,219
Otter Tail Power Company	\$	8,719
Dayton Power and Light Company	\$	8,035
Cleco Power LLC	\$	7,976
Wheeling Power Company	\$	7,021
Entergy Texas, Inc.	\$	6,835
Ohio Power Company	\$	1,661
Black Hills Power, Inc.	\$	-

The above data represents total AROs for these utilities. I quickly realized that the AROs needed to be segregated for coal ash costs only. As a result, I researched the 2017 individual financial statements of the 25 utilities with the highest AROs extracted from SNL Financial to segregate the coal ash AROs from other items not related to coal ash. The results of this analysis can be seen in Table 8 below.

Table 8: Coal Ash ONLY AROs

Rank	Company Name	Coal Ash AROs (\$000)
1	Duke Energy Progress, LLC	\$ 2,075,000 ²⁶
2	Duke Energy Carolinas, LLC	\$ 1,629,000 ²⁷
3	Georgia Power Company	\$ 1,424,000
4	Duke Energy Indiana, LLC	\$ 763,000
5	Virginia Electric and Power Company	\$ 624,000
6	Alabama Power Company	\$ 324,000
7	DTE Electric Company	\$ 225,000

²⁶ Duke Energy 10-k, page 183

²⁷ id

1	8	Mississippi Power Company	\$	173,851
	9	Gulf Power Company	\$	142,292
	10	Kentucky Utilities Company	\$	142,292
	11	Arizona Public Service Company	\$	139,000
	12	Kansas City Power & Light Company	\$	91,400
	13	Kansas Gas and Electric Company	\$	74,300
	14	Public Service Company of New Mexico	\$	33,396
	15	CLECO	\$	28,524
	16	Portland General Electric Company	\$	23,000
	17	Indiana Michigan Power Company	\$	21,774
	18	Duke Energy Florida, LLC	\$	19,000
	19	Florida Power & Light Company	\$	-
	20	Entergy Arkansas, LLC	\$	-

2

3 There were 6 utilities for which I could not determine a coal ash ARO. Those
4 companies were Nevada Power, Public Service of Oklahoma, Allete, Empire
5 District, Kentucky Power, and Dayton Power & Light. The highest ARO,
6 however, in this group, is only \$266 million

7

8 As can be seen in the table above, the Duke AROs specific to coal ash are MUCH
9 greater than the coal ash AROs from other utilities. On the surface, this table
10 strongly implies that the North Carolina CAMA legislation is much more stringent
11 than the CCR requirements.

12

13 **Q. DID YOU DO ANY FURTHER ANALYSIS ON THE COAL ASH AROs AS**
14 **STATED BY DUKE RELATIVE TO OTHER UTILITIES?**

15 A. Yes. I recognize that Duke may have a greater amount of coal generation relative
16 to other utilities in the country. To normalize for the difference in coal ash
17 generation across the country, I also examined the established AROs relative to
18 the amount of coal ash that is present for each utility in the above-stated table. To
19 be specific, I calculated a ratio of coal ash AROs relative to the KWHs of coal
20 generation for each utility. I determined the amount of KWHs of historical coal
21 generation by multiplying the amount of coal generation of each utility by the
22 average age of the utility's coal generation fleet by an assumed capacity factor of

65%. Lastly, I sorted the ratio of coal ash AROs by KWHs of coal generation to calculate a ratio for each utility. The results of this analysis can be seen in Table 9 below.

Table 9: Coal Ash ARO per KWH of Generation

Rank	Company	Calculated ARO per kWh of Generation
1	Duke Energy Progress, LLC	\$ 0.002168
2	Mississippi Power Company	\$ 0.001392
3	Duke Energy Carolinas, LLC	\$ 0.000892
4	Georgia Power Company	\$ 0.000860
5	Duke Energy Indiana, LLC	\$ 0.000697
6	Virginia Electric and Power Company	\$ 0.000551
7	Gulf Power Company	\$ 0.000298
8	Arizona Public Service Company	\$ 0.000290
9	Alabama Power Company	\$ 0.000274
10	Kentucky Utilities Company	\$ 0.000274
11	Kansas Gas and Electric Company	\$ 0.000254
12	Public Service Company of New Mexico	\$ 0.000147
13	Kansas City Power & Light Company	\$ 0.000145
14	DTE Electric Company	\$ 0.000123
15	Portland General Electric Company	\$ 0.000123
16	Indiana Michigan Power Company	\$ 0.000071
17	Duke Energy Florida, LLC	\$ 0.000063
18	CLECO	\$ 0.000057
19	Florida Power & Light Company	\$ -
20	Entergy Arkansas, LLC	\$ -

Q. HOW DO DEC AND DEP COMPARE TO NEARBY UTILITIES THAT OPERATE IN SIMILAR GEOGRAPHIC CLIMATES?

A. In Table 10 below I have provided a comparison of how DEC and DEP compare to nearby utilities.

1

Table 10: Coal Ash ARO per KWH of Generation

Company	Calculated ARO per kWh of Generation
Duke Energy Progress, LLC	\$ 0.002168
Mississippi Power Company	\$ 0.001392
Duke Energy Carolinas, LLC	\$ 0.000892
Georgia Power Company	\$ 0.000860
Virginia Electric and Power Company	\$ 0.000551
Gulf Power Company	\$ 0.000298
Alabama Power Company	\$ 0.000274
Kentucky Utilities Company	\$ 0.000274
Duke Energy Florida, LLC	\$ 0.000063
CLECO	\$ 0.000057

2

3 **Q. CAN YOU PROVIDE A COST COMPARISON BETWEEN WHAT DUKE**
4 **MANUFACTURING CUSTOMERS ARE BEING ASKED TO PAY FOR**
5 **COAL ASH RELATIVE TO WHAT MANUFACTURERS IN**
6 **NEIGHBORING STATES ARE BEING ASKED TO PAY FOR COAL ASH**
7 **REMEDiation?**

8 **A.** Yes. Using a 20 MW manufacturing load with a 85% load factor, the cost to the
9 DEP manufacturer would be \$322,859 as opposed to the average cost in other
10 southeastern states of \$70,160.

11

12 The above-stated cost difference over an estimated 10-year cleanup span threatens
13 South Carolina's competitiveness and very well could mean the difference of
14 ongoing viability of many manufacturing jobs in the Carolinas. To the extent that
15 the Commission determines Duke has responsibility for cleaning up its coal ash
16 ponds, and I believe they should, Duke stockholders should shoulder the burden.

17

1 **Q. WHAT IS THE TOTAL AMOUNT OF YOUR RECOMMENDED COAL**
 2 **ASH DISALLOWANCE IN THIS CASE?**

3 **A.** My recommended disallowance for the Company's coal ash request is 75%. My
 4 75% disallowance recommendation is the same as my recommendation before the
 5 North Carolina Utilities Commission in DEC's 2018 general rate case.

6
 7 Stockholders need to be held accountable for the actions of Duke executives that
 8 led to the Dan River spill that led, in turn, to the passage of CAMA. Given the
 9 fact that the DEP coal ash costs are so much higher than utilities operating in a
 10 similar manner, I believe consumers and stockholders should share the cleanup
 11 coal ash costs 75/25.

12

13 **4. Hourly Pricing Rates**

14 **Q. DOES DUKE OFFER A REAL-TIME HOURLY PRICE RATE?**

15 **A.** Yes, it does.

16

17 **Q. PLEASE EXPLAIN THE CONCERN ABOUT DUKE'S HOURLY PRICES**
 18 **RELATIVE TO PRICES IN OTHER PARTS OF THE COUNTRY.**

19 **A.** Duke operates a closed system as it relates to its hourly prices to consumers. The
 20 price offered to consumers on an hourly basis is the DEP marginal cost for its
 21 generation. However, at the same time DEP is selling marginal cost power to its
 22 RTP customers, the Company is also operating in the competitive wholesale
 23 power market where opportunity purchases and sales are being made. There may
 24 be times throughout the year when DEP's marginal cost of power offered to its
 25 manufacturing customers is greater than the price the Company could pay for that
 26 same power in the open wholesale market. Unfortunately, since Duke operates a
 27 closed system and prices its RTP costs at its own marginal costs, manufacturers
 28 are paying higher costs than necessary. On the same front, by failing to take
 29 advantage of lower cost power on the wholesale market, Duke is also needlessly

1 running its higher cost generating plants adding to higher fuel costs paid by all
2 consumers.

3
4 *****BEGIN CONFIDENTIAL***** 28

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13
14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19
20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED]

26 [REDACTED]

27 [REDACTED]

28

²⁸ Duke has declared its DEP RTP rates to be confidential in this case whereas the Company did not in the DEC case.

1 *****END CONFIDENTIAL*****

2
3 **Q. DO YOU HAVE ANY RECOMMENDATION FOR DEP IN AMENDING**
4 **ITS RTP RATE SCHEDULE IN THIS PROCEEDING?**

5 A. DEP's hourly pricing should be set at the lower of the Company's marginal cost
6 or the price as set by the open wholesale power market, as adjusted for
7 transmission costs and line losses to move the power to the DEP service territory.

8
9 The above recommendation to improve the DEP hourly pricing rates is but one
10 way that Duke can improve its relationship with its business customers.

11
12 **V. RECOMMENDATIONS AND CONCLUSION**

13 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSIS IN THIS**
14 **CASE.**

15 A. I began my analysis in this case by examining the DEP rates relative to utilities
16 across the United States and, in particular, the southeast. My conclusion follows:
17 DEP's industrial rates are losing its competitive position and will be dangerously
18 close to the national average if the Commission approves of Duke's long-term
19 plan of multiple rate cases over the next 10 years.

20
21 On the issue of grid investment expenses, the evidence shows Duke's consumers
22 are simply not willing to pay for massive rate hikes to enjoy a potential increase
23 in system reliability, and Duke is unwilling to guarantee any such improvement
24 in reliability. While some sort of grid investment may be warranted, the rate hikes
25 requested by Duke in this proceeding are unreasonable, particularly in light of the
26 fact that Duke was reported to have been recently fined \$10 million by the NERC
27 for repeated cybersecurity lapses since 2015.

28
29 My recommendation is the Commission deny Duke's rate hikes associated with
30 grid modernization and establish a separate proceeding and retain an independent

1 engineering firm that will assist the Commission in investigating the benefits and
2 disadvantages of Duke's grid investments. I further recommend that Duke be
3 required to have public forum whereby it seeks a wide range of input from the
4 general public into a series of questions developed to optimize the proper
5 magnitude of the Duke grid investments. Such a public input forum is particularly
6 needed in light of the magnitude of the rate increases Duke anticipates through its
7 grid investments.

8
9 In regard to coal ash, I have provided evidence in this proceeding that the Dan
10 River spill caused the passage of the Coal Ash Management Act (CAMA) in
11 North Carolina. After the coal ash spill, the federal government investigated the
12 actions of Duke Energy at its coal ash ponds and subsequently charged the
13 Company with nine violations of the Clean Water Act. Duke and the federal
14 government reached a plea deal where Duke admitted guilt and was fined \$102
15 million.

16
17 South Carolina ratepayers should pay for coal ash costs that are the result of
18 prudent operations. However, Duke's admission of guilt to imprudent operation
19 of its coal ash ponds resulted in the passage of CAMA. My analysis attempted to
20 determine a dividing line between Company actions before-and-after CAMA.
21 South Carolina consumers should not be asked to bear a burden inflicted on them
22 by North Carolina statutes.

23
24 My recommendation is the Commission disallow 75% of the coal ash costs Duke
25 is seeking to recover in this proceeding.

26
27 Finally, the Commission should order DEP to change its hourly pricing rates to
28 guarantee manufacturers in its service territory are receiving the lower cost power
29 available, either by DEP, itself, or in the marketplace.

- 1 **Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?**
- 2 **A. Yes.**